

REMARKS

The Examiner is thanked for the thorough examination of this application. The Office Action, however, has continued to reject all claims 14-27. In response, Applicant has amended each independent claim (14 and 21) to more clearly define over the cited art. In total, claims 14,16,17, 21, 22, and 27 have been amended in this response.

Objections to claim 16

The Office Action objected to claim 16 for certain informalities. In this regard, the Office Action indicates that, in claim 16, “a ball grid array (SBGA) like structure” should be changed to “a ball grid array (SBGA) structure”. Applicant has amended claim 16 in accordance with this suggestion. Accordingly, the objection to claim 16 should be withdrawn.

Rejections Under 35 U.S.C. 102(b) of Claims 14-20

Claims 14-20 stand rejected under 35 U.S.C. 102(b) as allegedly unpatentable over Chung et al (US 2002/0056924, hereinafter “Chung”). Claim 14 is independent claim, from which claims 15-20 depend. Applicant asserts that claim 14 is patentable for the reasons discussed below, and therefore for at least the same reasons claims 15-20 are patentable.

The Office Action asserts that Chung discloses an integrated circuit chip package comprising a stress buffering material (insulation material 415) only covering corners of said integrated circuit chip (210)

As amended herein, however, claim 14 recites:

14. An integrated circuit chip package comprising:
an integrated circuit chip having a plurality of edges and tips and attached to a substrate, wherein each tip is at a position where several edges meet;
a stress buffering material **only** covering portions of said integrated circuit chip which **are neighboring the tips**; and
an encapsulation material coating said integrated circuit chip and a portion of said substrate.

(Emphasis Added)

As emphasized above, the integrated circuit chip package defined by claim 14 comprises **a stress buffering material only covering portions of said integrated circuit chip which are neighboring the tips**. Wherein, each tip is located at a position where several edges meet.

In contrast, Chung discloses that “The BSG package 500 includes an insulation layer 415 on the **edge 418** of the semiconductor chip 410.” (see paragraph [0061], and Fig, 10). It is noted that the insulation layer 415 is used for the purpose of preventing an electric short between bonding wires and the semiconductor chip 410 (see e.g., claim 3). So that, it is impossible that the insulation layer 415 is formed only on portions, which are neighboring tips of the semiconductor chip 410. Instead, in Chung, it is necessary to form the insulation layer 415 on the entire edge 418 in order to prevent the electric short effectively.

Applicant submits that the stress buffering material defined in claim 14 is formed **only** on the portions of the integrated circuit chip which are **neighboring the tips**; and each tip is at a position where several edges meet. Accordingly, the integrated circuit chip package of the claimed embodiments is clearly different from the integrated circuit chip in Chung since the insulation material 415 is on the edge 418 of the semiconductor chip 410 **not only on portions neighboring the tips**. Accordingly, reconsideration of this rejection is hereby respectfully requested.

As Chung does not teach or suggest all the limitations recited in claim 14, claim 14 is allowable over the cited reference. Since claims 15-20 are dependent claims that incorporate the limitation of claim 14. Applicant respectfully asserts that the rejections of these claims are also improper, and Applicant requests that these claims be placed in condition for allowance.

Rejections Under 35 U.S.C. 103(a) of Claims 21-27

Claims 21-27 stand rejected under 35 U.S.C. 103(a) as allegedly unpatentable over Chung et al (US 2002/0056924, hereinafter “Chung”) in view of Tomoko et al (JP 0621628A, hereinafter “Tomoko”). Claim 21 is independent claim, from which claims 22-27 depend. Applicant asserts that claim 21 is patentable for the reasons discussed below, and therefore for at least the same reasons claims 22-27 are patentable.

The Office Action asserts that the combination of Chung and Tomoko discloses an integrated chip as claim 21. .

As amended herein, independent claim 21 recites:

21. An integrated circuit chip package comprising:
an integrated circuit chip having a plurality of edges and tips and attached to a substrate, wherein each tip is at a position where several edges meet;
a stress buffering material having a substantially equal coefficient of thermal expansion to said integrated circuit chip, ***and only covering portions of said integrated circuit chip which are neighboring the tips***; and
an encapsulation material covering said integrated circuit chip and said stress buffering material.

(Emphasis Added)

As emphasized above, the integrated circuit chip package in claim 21 comprises **a stress buffering material only covering portions of said integrated circuit chip which are neighboring the tips**. Wherein, each tip is at a position where several edges meet.

However, and as discussed above in connection with claim 14, Chung does not teach or suggest that the stress buffering material only covering portions of said integrated circuit chip which are neighboring the tips.

In addition, Tomoko teach that the coating material 2 covers the whole rear surface and partial side surface of the semiconductor chip 1.

As neither of Chung nor Tomoko teach or suggest all the limitations recited in amended claim 21, it this claim is allowable over the cited references. Insofar as claims 22-27 depend from amended claim 21, these claims are also allowable at least by virtue of their dependency.

As a separate and independent basis for the patentability of claims 21-27, Applicants respectfully traverse the rejections as failing to identify a proper basis for combining the cited references. In combining these references, the Office Action stated only that the combination would have been obvious "in order to reduce thermal stress." (Office Action, page 4). This alleged motivation is clearly improper in view of well-established Federal Circuit precedent.

It is well-settled law that in order to properly support an obviousness rejection under 35 U.S.C. § 103, there must have been some teaching in the prior art to suggest to one skilled in the art that the claimed invention would have been obvious. W. L. Gore & Associates, Inc. v. Garlock Thomas, Inc., 721 F.2d 1540, 1551 (Fed. Cir. 1983). More significantly,

"The consistent criteria for determination of obviousness is whether the prior art would have suggested to one of ordinary skill in the art that this [invention] should be carried out and would have a reasonable likelihood of success, viewed in light of the prior art. ..." Both the suggestion and the expectation of success must be founded in the prior art, not in the applicant's disclosure... In determining whether such a suggestion can fairly be gleaned from the prior art, the full field of the invention must be considered; for the person of ordinary skill in the art is charged with knowledge of the entire body of technological literature, including that which might lead away from the claimed invention."

(*Emphasis added.*) In re Dow Chemical Company, 837 F.2d 469, 473 (Fed. Cir. 1988).

In this regard, Applicant notes that there must not only be a suggestion to combine the functional or operational aspects of the combined references, but that the Federal Circuit also requires the prior art to suggest both the combination of elements and the structure resulting from the combination. Stiftung v. Renishaw PLC, 945 Fed.2d 1173 (Fed. Cir. 1991). Therefore, in order to sustain an obviousness rejection based upon a combination of any two or more prior art references, the prior art must properly suggest the desirability of combining the particular elements to derive an encapsulation method for SBGA, as claimed by the Applicant.

When an obviousness determination is based on multiple prior art references, there must be a showing of some “teaching, suggestion, or reason” to combine the references. Gambro Lundia AB v. Baxter Healthcare Corp., 110 F.3d 1573, 1579, 42 USPQ2d 1378, 1383 (Fed. Cir. 1997) (also noting that the “absence of such a suggestion to combine is dispositive in an obviousness determination”).

Evidence of a suggestion, teaching, or motivation to combine prior art references may flow, inter alia, from the references themselves, the knowledge of one of ordinary skill in the art, or from the nature of the problem to be solved. See In re Dembiczak, 175 F.3d 994, 1000, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999). Although a reference need not expressly teach that the disclosure contained therein should be combined with another, the showing of combinability, in whatever form, must nevertheless be “clear and particular.” Dembiczak, 175 F.3d at 999, 50 USPQ2d at 1617.

If there was no motivation or suggestion to combine selective teachings from multiple prior art references, one of ordinary skill in the art would not have viewed the present invention as obvious. See In re Dance, 160 F.3d 1339, 1343, 48 USPQ2d 1635, 1637 (Fed. Cir. 1998);

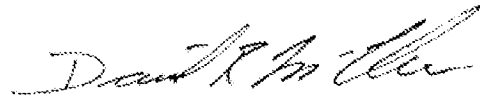
Gambro Lundia AB, 110 F.3d at 1579, 42 USPQ2d at 1383 (“The absence of such a suggestion to combine is dispositive in an obviousness determination.”).

Significantly, where there is no apparent disadvantage present in a particular prior art reference, then generally there can be no motivation to combine the teaching of another reference with the particular prior art reference. Winner Int'l Royalty Corp. v. Wang, No 98-1553 (Fed. Cir. January 27, 2000). In the present situation, the mere allegation that the combination would reduce thermal stress reflects clear and improper hindsight reasoning. There is nothing in that motivation which would lead on to combine the two references, and merely alleging a benefit that would result from the combination is insufficient to constitute a proper motivation or suggestion to combining the references, under clearly established Federal Circuit precedent.

For at least the additional reason that the Office Action failed to identify proper motivations or suggestions for combining the various references to properly support the rejections under 35 U.S.C. § 103, those rejections should be withdrawn.

No fee is believed to be due in connection with this amendment and response. If, however, any additional fee is deemed to be payable, you are hereby authorized to charge any such fee to Deposit Account No. 20-0778.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Daniel R. McClure", written over a horizontal line.

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